SRAM®

Guide Ultimate

Service Manual

GEN.0000000004961 Rev B
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SRAM LLC WARRANTY

EXTENT OF LIMITED WARRANTY

Except as otherwise set forth herein, SRAM warrants its products to be free from defects in materials or workmanship for a period of two years after original purchase. This warranty only applies to the original owner and is not transferable. Claims under this warranty must be made through the retailer where the bicycle or the SRAM component was purchased. Original proof of purchase is required. **Except as described herein, SRAM makes no other warranties, guaranties, or representations of any type (express or implied), and all warranties (including any implied warranties of reasonable care, merchantibility, or fitness for a particular purpose) are hereby disclaimed.**

LOCAL LAW

This warranty statement gives the customer specific legal rights. The customer may also have other rights which vary from state to state (USA), from province to province (Canada), and from country to country elsewhere in the world.

To the extent that this warranty statement is inconsistent with the local law, this warranty shall be deemed modified to be consistent with such law, under such local law, certain disclaimers and limitations of this warranty statement may apply to the customer. For example, some states in the United States of America, as well as some governments outside of the United States (including provinces in Canada) may:

a. Preclude the disclaimers and limitations of this warranty statement from limiting the statutory rights of the consumer (e.g. United Kingdom).

b. Otherwise restrict the ability of a manufacturer to enforce such disclaimers or limitations.

For Australian customers:
This SRAM limited warranty is provided in Australia by SRAM LLC, 1333 North Kingsbury, 4th floor, Chicago, Illinois, 60642, USA. To make a warranty claim please contact the retailer from whom you purchased this SRAM product. Alternatively, you may make a claim by contacting SRAM Australia, 6 Marco Court, Rowville 3178, Australia. For valid claims SRAM will, at its option, either repair or replace your SRAM product. Any expenses incurred in making the warranty claim are your responsibility. The benefits given by this warranty are additional to other rights and remedies that you may have under laws relating to our products. Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

LIMITATIONS OF LIABILITY

To the extent allowed by local law, except for the obligations specifically set forth in this warranty statement, in no event shall SRAM or its third party suppliers be liable for direct, indirect, special, incidental, or consequential damages.

LIMITATIONS OF WARRANTY

This warranty does not apply to products that have been incorrectly installed and/or adjusted according to the respective SRAM user manual. The SRAM user manuals can be found online at sram.com, rockshox.com, avidbike.com, truvativ.com, or zipp.com.

This warranty does not apply to damage to the product caused by a crash, impact, abuse of the product, non-compliance with manufacturers specifications of usage or any other circumstances in which the product has been subjected to forces or loads beyond its design.

This warranty does not apply when the product has been modified, including, but not limited to any attempt to open or repair any electronic and electronic related components, including the motor, controller, battery packs, wiring harnesses, switches, and chargers.

This warranty does not apply when the serial number or production code has been deliberately altered, defaced or removed.

This warranty does not apply to normal wear and tear. Wear and tear parts are subject to damage as a result of normal use, failure to service according to SRAM recommendations and/or riding or installation in conditions or applications other than recommended.

Wear and tear parts are identified as:

- Dust seals
- Bushings
- Air sealing o-rings
- Glide rings
- Rubber moving parts
- Foam rings
- Rear shock mounting hardware and main seals
- Upper tubes (stanchions)
- Stripped threads/bolts (aluminium, titanium, magnesium or steel)
- Brake sleeves
- Brake pads
- Chains
- Sprockets
- Cassettes
- Shifter and brake cables (inner and outer)
- Handlebar grips
- Shifter grips
- Jockey wheels
- Disc brake rotors
- Wheel braking surfaces
- Bottomout pads
- Bearings
- Bearing races
- Pawls
- Transmission gears
- Spokes
- Free hubs
- Aero bar pads
- Corrosion
- Tools
- Motors
- Batteries

Notwithstanding anything else set forth herein, the battery pack and charger warranty does not include damage from power surges, use of improper charger, improper maintenance, or such other misuse.

This warranty shall not cover damages caused by the use of parts of different manufacturers.

This warranty shall not cover damages caused by the use of parts that are not compatible, suitable and/or authorised by SRAM for use with SRAM components.

This warranty shall not cover damages resulting from commercial (rental) use.

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SAFETY FIRST!

We care about YOU. Please, always wear your safety glasses and protective gloves when servicing SRAM products.
Protect yourself! Wear your safety gear!

Brake Service Overview

SRAM brake systems need to be serviced periodically to optimize braking function. If brake fluid is leaking from any area of the brake there may be damage or wear and tear to the internal moving parts. If the system has been contaminated with the wrong fluid there may be damage to all rubber and plastic internal parts. If your brake was damaged in a crash there may be damage to the lever blade, pushrod, and housing assemblies. Inspect and replace these parts to restore proper brake function.

Your product's appearance may differ from the pictures contained in this publication.

SAFETY INSTRUCTIONS

- Servicing your brakes removes all of the brake fluid from the system. You must bleed your brakes after you service the brake caliper and/or lever.
- Always wear safety glasses and nitrile gloves when working with DOT fluid.
- Place an oil pan on the floor where you will be working on the brake.
- Used DOT fluid should be recycled or disposed of in accordance to local and federal regulations.
- Never pour DOT fluid down a sewage or drainage system or into the ground or a body of water.
- DOT fluids will damage painted surfaces. If any fluid comes in contact with a painted surface (i.e. your frame) or printing on the brakes, wipe it off immediately and clean it with isopropyl alcohol or water. Damage to painted and/or printed surfaces by DOT fluid is not covered under warranty.
- Do not allow any brake fluid to come in contact with the brake pads. If this occurs, the pads are contaminated and must be replaced.
- For best results, use only SRAM High-Performance 5.1 DO fluid. If SRAM fluid is not available, only use DOT 5.1 or 4 fluid. **Do not use mineral oil or DOT 5 fluid.**

NOTICE

SRAM Guide Ultimate Brakes are a unique product. The Guide Ultimate caliper must be serviced before the lever. The lever must be connected to the caliper and the brakes must still have fluid in them in order to advance the pistons and service the caliper. Once the lever has been disconnected and the fluid drained it is not possible to advance the pistons.

Troubleshooting

'Sticky' or slow brake pad return excessive lever throw

If your brakes feel sticky and exhibit slow brake pad return and/or excessive brake lever throw, it may be a result of the pistons sticking in the caliper. Before completely disassembling your caliper, you can try to loosen the sticky piston by performing the following steps:

1. Clamp the bicycle into a bicycle work stand.
2. Remove the wheel from the affected caliper.
3. Squeeze the brake lever several times until the brake pads nearly contact one another.
4. Insert the Guide Ultimate pad spreader between the brake pads to spread the pads to the full width of the clip.
5. Remove the Guide Ultimate pad spreader.
6. Repeat steps 3-5.
7. Reinstall the wheel.
8. Squeeze the brake lever several times to position the brake pads to the proper distance from the rotor.
9. Center the caliper on the rotor if necessary.
10. Spin the wheel and check the brake function. The pistons should move freely and there should not be excessive brake lever throw.

If there is no improvement in the brake function, proceed with caliper service.

Caliper Service

We recommend that you have your SRAM Guide Ultimate brakes serviced by a qualified bicycle mechanic. Servicing SRAM brakes knowledge of brake components as well as the special tools and oils used for service.

For exploded diagram and part number information, please refer to the Spare Parts Catalog available on our website at sram.com/service. For order information, please contact your local SRAM distributor or dealer.

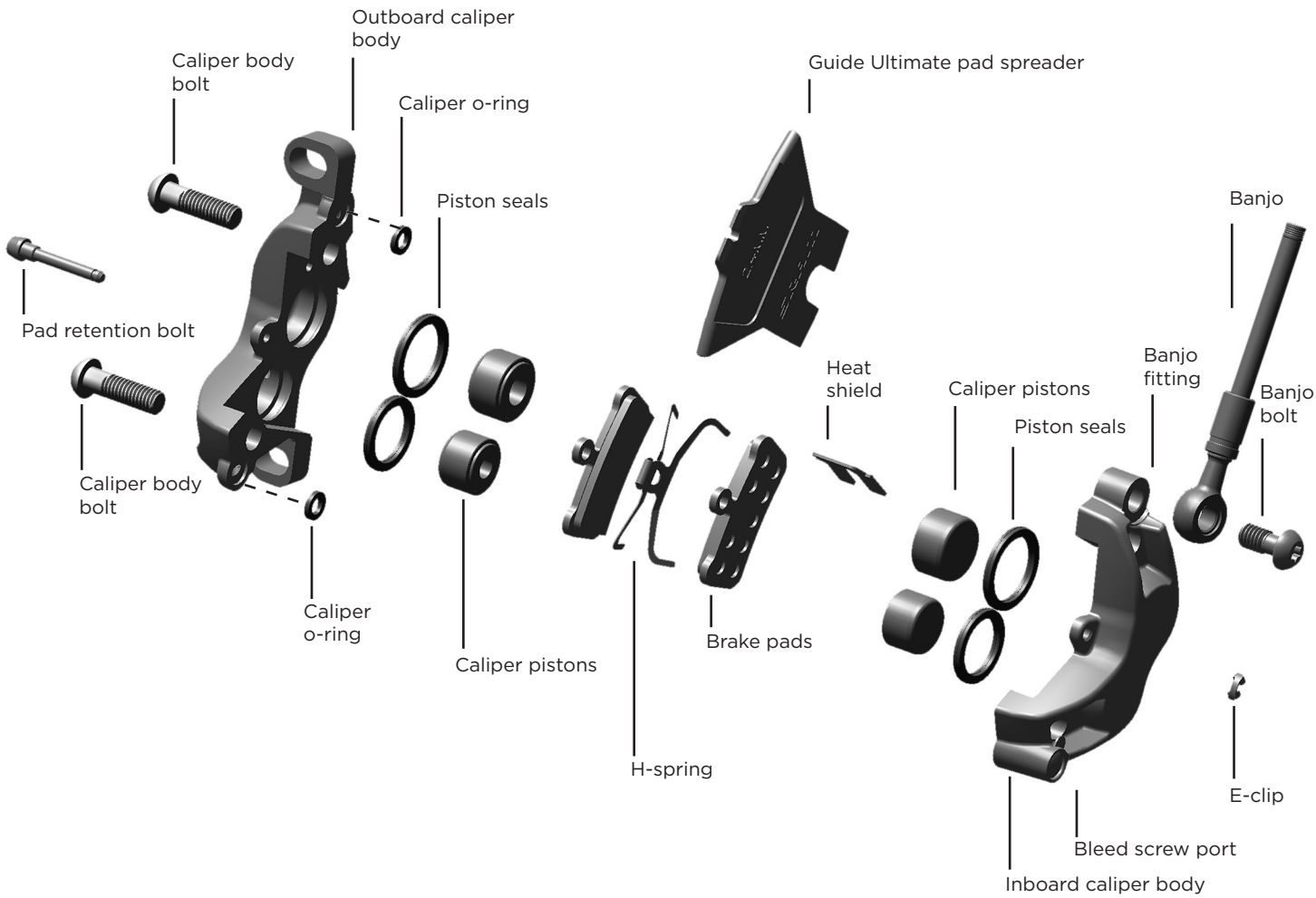
Information contained in this publication is subject to change at any time without prior notice. For the latest technical information, please visit our website at sram.com/service.

Your product's appearance may differ from the pictures contained in this publication

Parts and Tools Needed for Service

- Safety glasses
- Nitrile gloves
- Oil pan
- Isopropyl alcohol
- Clean, lint-free rag
- Bleed block
- Guide Ultimate pad spreader
- Pick with a 90 degree bent tip
- T25 TORX® wrench
- T25 TORX bit socket
- Torque wrench
- SRAM High-Performance 5.1 DOT fluid
- DOT compatible grease

Caliper Exploded View



Caliper Brake Pad Removal

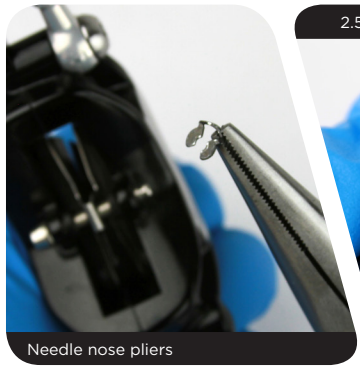
NOTICE

DOT fluid will damage painted surfaces. If any fluid comes in contact with a painted surface (i.e. your frame) or printing on the brakes, wipe it off immediately and clean it with isopropyl alcohol or water. Damage to painted and/or printed surfaces by DOT fluid is not covered under warranty.

1 Use a T25 TORX® wrench to remove the brake caliper from the fork or frame.

Remove the caliper mounting bracket and hardware from the caliper then set them aside in the order that they were removed.

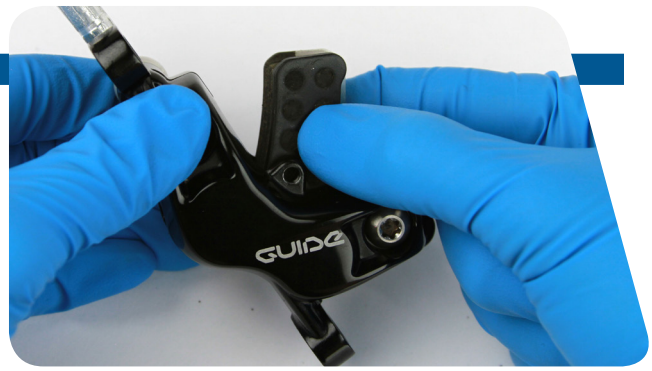
2 Use needle nose pliers to remove the E-clip from the pad retention bolt. Remove the Guide Ultimate pad spreader. Use a 2.5 mm hex wrench to remove the pad retention bolt from the caliper.


Needle nose pliers

3 Remove the brake pads from the caliper.

NOTICE

Brake pads must be replaced if the total thickness of the backing plate and pad friction material is less than 3 mm.



Caliper

Caliper Piston Removal

NOTICE

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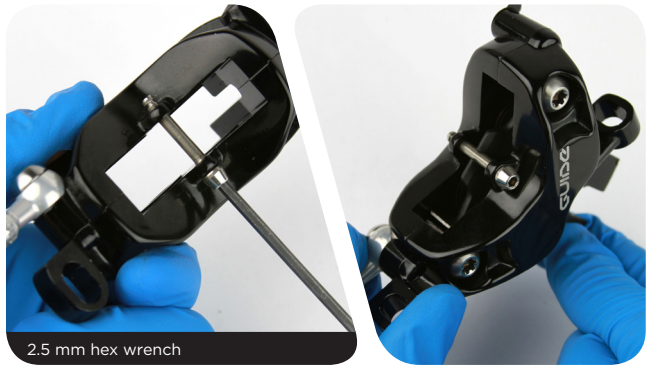
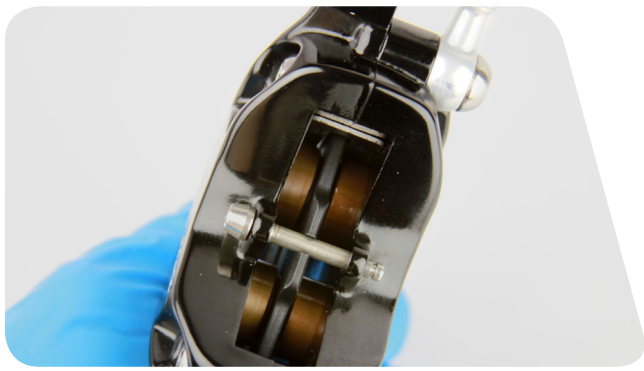
1 Use a 2.5 mm hex wrench to install the pad retention bolt.

Insert the Guide Ultimate pad spreader so that it snaps onto the pad retention bolt.


2.5 mm hex wrench

2 Squeeze the brake lever to advance the pistons until they contact the pad spreader.



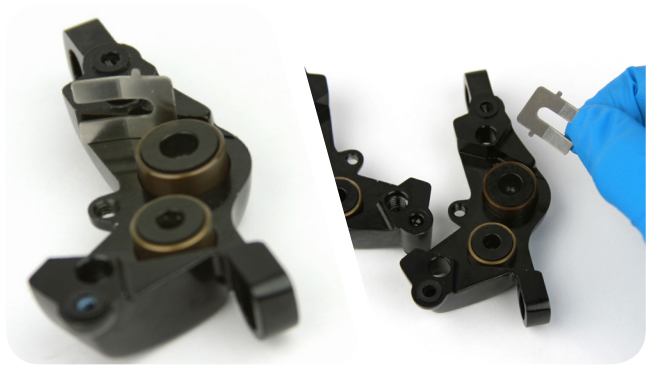
3 Use a T25 TORX® wrench to remove the banjo bolt.

T25 TORX wrench

4 Remove the Guide Ultimate pad spreader.
Use a 2.5 mm hex wrench to remove the pad retention bolt.

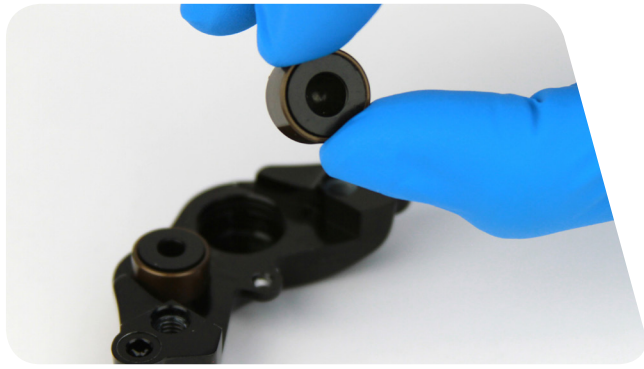
5 Use a T25 TORX® wrench to remove each caliper body bolt.

6 Separate the caliper body halves.
Set the heat shield aside.



7 Remove both of the caliper o-rings from the outboard side of the caliper.

8 Remove the pistons from each caliper body half.



9 Use a pick to remove the piston seals from each caliper body half. Install new seals inside each caliper body half.

⚠WARNING

Do not scratch the seal gland with the pick. Scratches could cause fluid to leak when the brake is applied, which will contaminate the brake pads and could lead to a brake failure.

Pick

Caliper Piston Installation

NOTICE

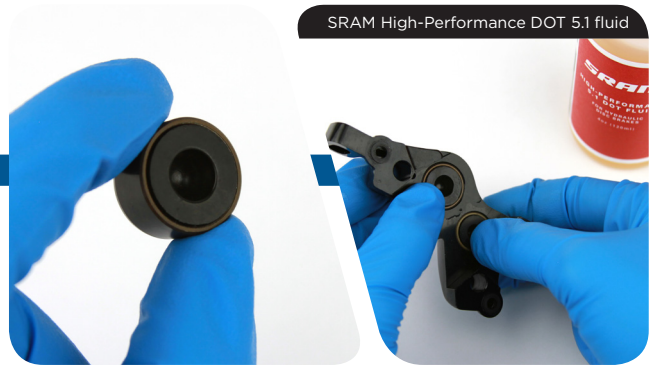
DOT fluid will damage painted surfaces. If any fluid comes in contact with a painted surface (i.e. your frame) or printing on the brakes, wipe it off immediately and clean it with isopropyl alcohol or water. Damage to painted and/or printed surfaces by DOT fluid is not covered under warranty.

1 Inspect the caliper pistons for damage and replace the pistons if necessary.

Use your gloved finger to apply a small amount of SRAM High-Performance 5.1 DOT fluid to the circumference of each piston. Install the pistons into each half of the caliper body.

NOTICE

For the best braking performance, use only SRAM High-Performance 5.1 DOT fluid. If SRAM fluid is not available, use only DOT 5.1 or 4 fluid. Do not use grease. Grease will prevent the pistons from fully retracting into the caliper bores which will reduce braking performance.

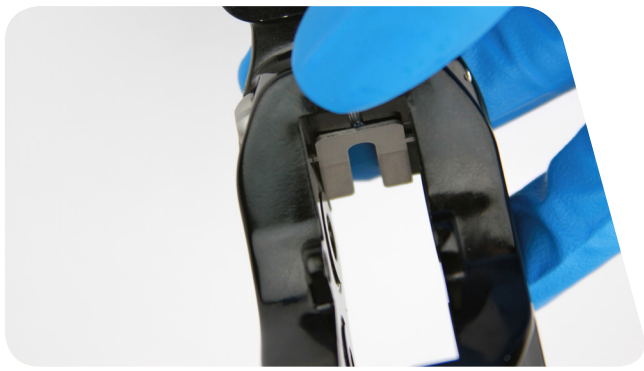


2 Spray isopropyl alcohol on the caliper halves and both of your gloves, and clean them with a rag.

3 Install new caliper o-rings onto the outboard caliper half. Add a small amount of DOT compatible grease onto the installed o-rings to help them stay in place, or to prevent them from falling out, as you assemble the caliper.

4 Align the caliper body halves then use a T25 TORX® wrench to thread each body bolt into the caliper two full turns.

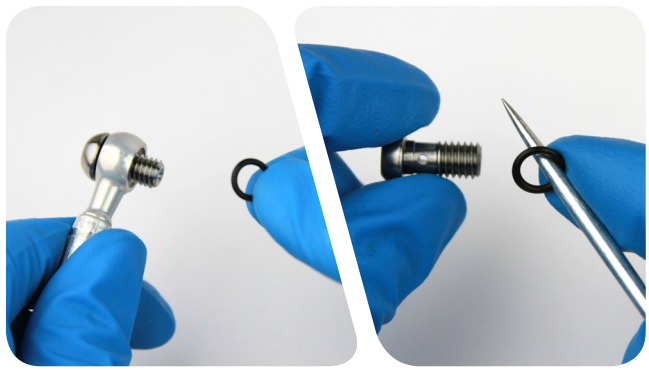
Install the heat shield.



5 Use a T25 TORX bit socket with a torque wrench to tighten each bolt to 4.4-5.4 N·m (39-48 in-lb).

6 Remove the o-rings from the banjo bolt and banjo fitting.

Apply a small amount of SRAM High-Performance 5.1 DOT fluid to the new o-rings and install them.



7 Hold the banjo at the desired angle.

Use a torque wrench with a T25 TORX® bit socket to tighten the bolt to 4.4-5.4 N·m (39-48 in-lb).

8 Insert the Guide Ultimate bleed block into the caliper.

⚠WARNING

You must bleed your brakes before reinstalling the brake pads. Installing the brake pads prior to bleeding the brakes could contaminate the brake pads and could lead to a brake failure.

9 Spray isopropyl alcohol on the caliper and clean it with a rag.

Visually check your work. If any of the o-rings protrude from the banjo fitting or banjo bolt, remove and replace the o-rings, then repeat the installation process.

SAFETY INSTRUCTIONS

Servicing your brakes removes all of the fluid from the system.
You must bleed the brakes after you service the brake caliper and/or lever.

For brake bleed, brake hose shortening, and brake pad replacement instructions, visit www.sram.com/service.

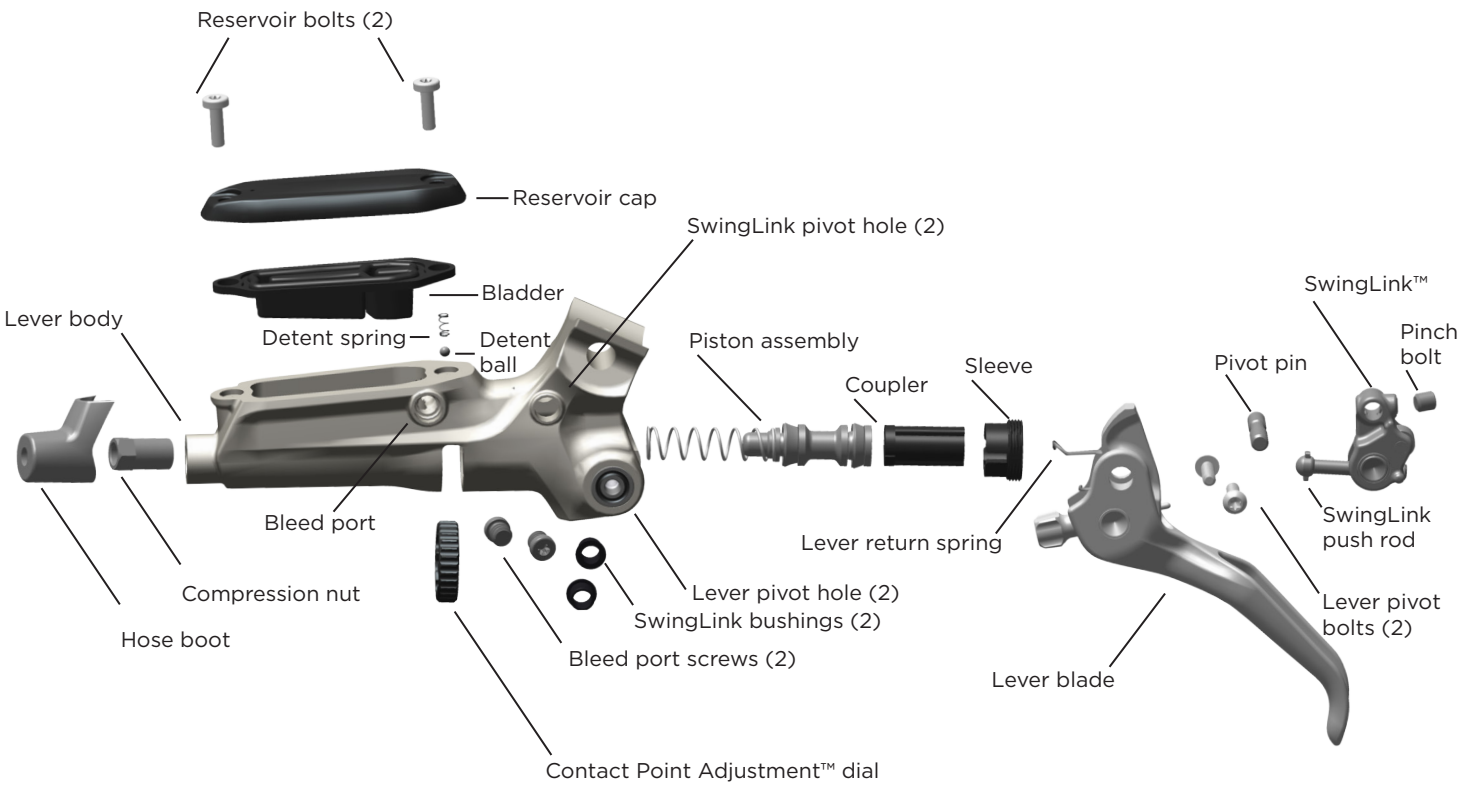
Lever Service

Parts and Tools Needed for Service

- Safety glasses
- Nitrile gloves
- Oil pan
- Isopropyl alcohol
- Clean, lint-free rag
- SRAM High-Performance 5.1 DOT fluid or DOT 4 Fluid, or SRAM DOT Grease
- DOT compatible grease
- Loctite® 242®
- Needle nose pliers
- Lever Internals Kit
- Pick with a 90 degree bent tip
- T8, T10, & T25 TORX® wrench
- T8 & T10 TORX bit socket
- 8 mm flare nut wrench
- 2 mm & 4 mm hex wrench
- Torque wrench
- SRAM® Guide Lever Internals Assembly Tool (install internals)

SRAM Guide Lever Internals Assembly Tool

Guide Ultimate Exploded View



Lever Blade Removal

NOTICE

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1. Use a T25 TORX® wrench or a 4 mm hex wrench to remove the brake clamp bolt from the discrete clamp, MMX, or XLoc™ (XLoc requires removal of the shifter) and remove the brake lever from the handlebar.

2. Pull the hose boot away from the brake body to expose the compression nut, then slide the boot down the brake hose.

3. Use an 8 mm flare nut wrench to unthread the hose compression nut, then pull the brake hose and compression fitting from the brake lever body.

8 mm flare nut wrench

4. Pour the brake fluid into an oil pan. Squeeze the lever blade to force any remaining brake fluid out of the lever body.

NOTICE

If the system has been contaminated with mineral oil or DOT 5 fluid, flush all the parts with soapy water, rinse, and allow all parts to dry prior to rebuilding. Install all new seals and a new hose.

For the best braking performance, use only SRAM High-Performance 5.1 DOT fluid. If SRAM fluid is not available, use only High-Performance 5.1 DOT fluid or 4 fluid.

5 Use a T10 TORX® wrench to remove the reservoir cap bolt nearest to the lever blade.

T10 TORX wrench

6 Carefully turn the lever body upside down so that the detent spring and ball fall out of the lever body. If they do not initially fall out, gently tap the lever against a clean rag.

7 Use a T10 TORX® wrench to remove the other reservoir cap bolt.

T10 TORX wrench

8 Remove the reservoir cover and bladder from the lever body.

9 Pour the fluid from the brake lever body into a pan.

10 Separate the bladder from the reservoir cover.

Spray isopropyl alcohol on the bladder and the reservoir cover, then clean them with a rag.

NOTICE

All components must be completely dry before reinstalling them. Moisture residue from cleaning the bladder can leak out of the bladder as it dries, which can be misinterpreted as a system leak, when it is not.

11 Use a T10 TORX® wrench to remove the lever pivot bolts.

T10 TORX wrench

12 Remove the lever blade.

Piston Assembly Removal

1 Use a T8 TORX® wrench to unthread then remove the SwingLink™ pinch bolt from the lever body.

T8 TORX wrench

2 Use the end of a T8 TORX wrench to push the SwingLink pivot pin out of the lever body.

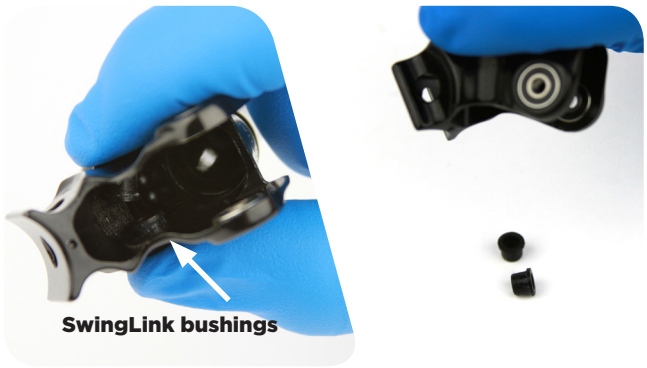
T8 TORX wrench

3 Slide the end of a T8 TORX wrench through the hole in the SwingLink, then pull the SwingLink out of the lever body.

T8 TORX wrench

T8 TORX wrench

4 Remove the SwingLink™ bushings by hand.



5 Insert the SRAM Guide Lever Internals Assembly Tool into the lever body and align the keyslot of the tool with the piston sleeve. Use the tool to unthread the sleeve, then remove the sleeve and coupler from the lever body.

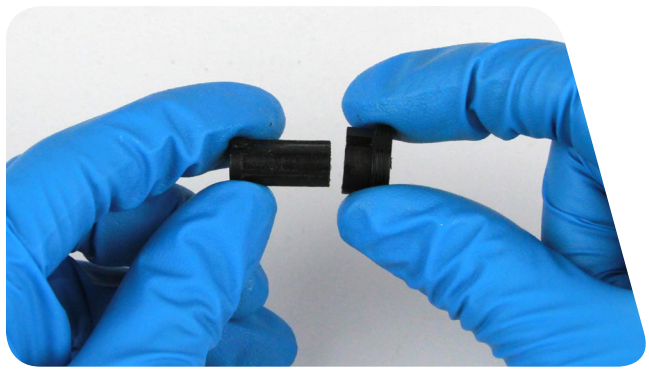
If the piston sleeve and coupler become stuck in the lever body after unthreading the piston sleeve, use a pair of needle nose pliers to gently grip the piston sleeve and remove it from the lever body.

SRAM Guide Lever Internals Assembly Tool

SRAM Guide Lever Internals Assembly Tool

6 Remove the sleeve from the coupler from the SRAM tool, then separate the sleeve and coupler by hand.

Spray isopropyl alcohol on both the sleeve and the coupler and clean them with a rag.



7 Place a rag over the open end of the lever body near the Contact Point Adjustment™ dial.

Use your fingers to slide the Contact Point Adjustment dial out of the lever body.

⚠CAUTION - EYE HAZARD

Wear safety glasses.

The piston assembly is spring loaded and will forcefully eject from the lever body when the Contact Point Adjustment dial is removed. Be sure to cover the end of the lever body with a rag to capture the piston assembly and prevent it from becoming a projectile.

8 Remove the piston assembly from the lever body.

9 Spray isopropyl alcohol on the lever body and the lever blade, then clean them with a rag.

Piston Assembly Installation

NOTICE

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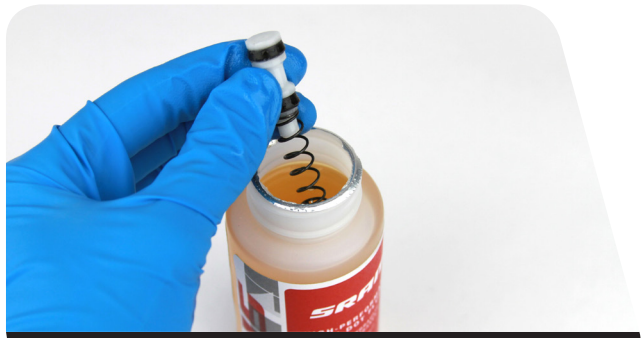
1 Submerge the new piston assembly in SRAM High-Performance 5.1 DOT fluid.

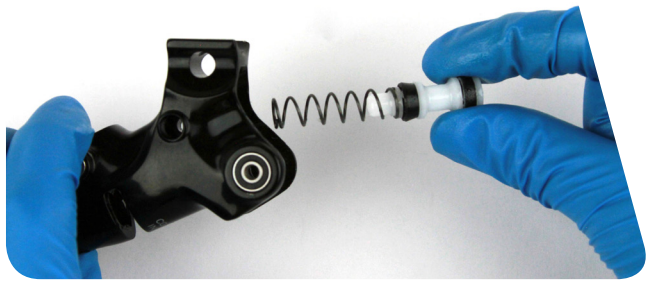
You can also use SRAM High-Performance 5.1 DOT fluid or 4 compatible grease, as a lubricant.



SRAM High-Performance 5.1 DOT fluid

2 Insert the piston assembly into the lever body.

Spray isopropyl alcohol on the lever body and both of your gloves, then clean them with a rag.



3 Use the SRAM Guide Lever Internals Assembly Tool to press the piston into the lever body. While pressing down on the piston, with the half moon shape of the tool turned toward the lever opening, insert the contact adjust dial half way into the lever then remove the tool. Continue to insert the dial so that it is fully seated into the lever body.

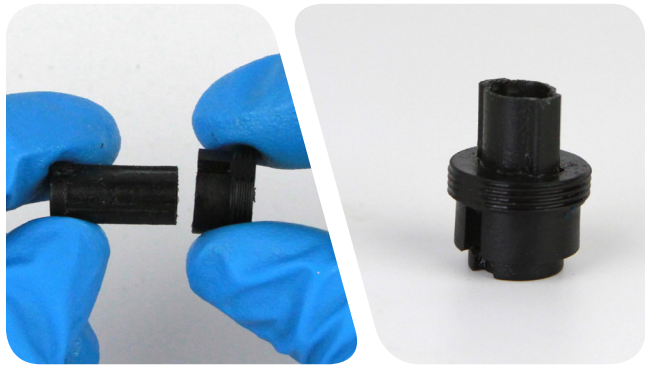
You should hear a pop sound when the contact knob is fully seated in place.

SRAM Guide Lever Internals Assembly Tool

SRAM Guide Lever Internals Assembly Tool

4 Insert the sleeve into the coupler by hand.

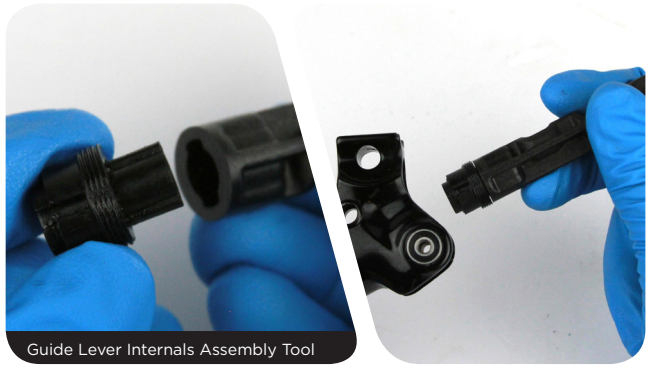
The sleeve threads must be oriented away from the base of the coupler.



5 Insert the sleeve and coupler into the keyslot of the SRAM Guide Lever Internals Assembly Tool.

Use the SRAM tool to align the slots on the sleeve with the slots on the contact adjust dial and insert the SRAM tool into the lever body until you feel the sleeve and contact adjust dial engage.

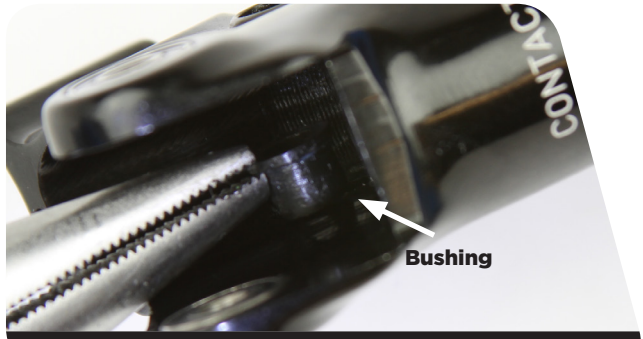
Thread the sleeve into the lever body until it stops then remove the SRAM tool from the lever body.



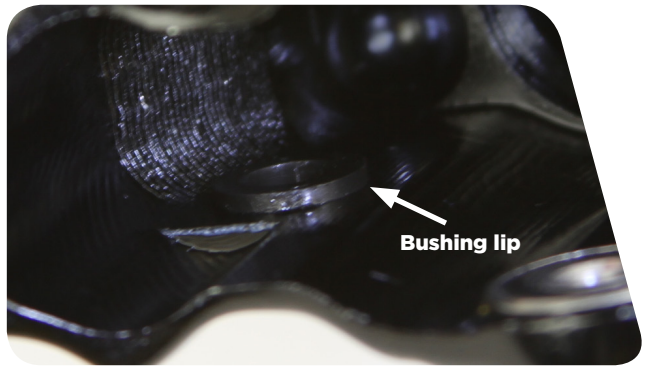
Guide Lever Internals Assembly Tool

6 Use needle nose pliers to install the SwingLink™ bushings into the lever SwingLink pivot holes so that the lip of the bushing is flush on the inside of the lever body.

If the SwingLink bushings fall out easily, apply a small amount of grease to the bushings to help hold them in place.



Needle nose pliers



7 Use a caliper to verify that the push rod lenth in the SwingLink™ is 26.3 mm. Turn the push rod counter-clockwise by hand to extend the pushrod length. Turn the push rod clockwise by hand to decrease the pushrod length.

NOTICE

The push rod length must be set to exactly 26.3 mm. Any other length will reduce brake performance.

Caliper

8 Place the SwingLink onto a 2 mm hex wrench then insert the pushrod into the coupler sleeve.

2 mm hex wrench

9 Align the SwingLink™ pivot holes and the SwingLink bushings, then press the pivot pin into the SwingLink pivot hole until it is flush with the lever body on both sides.

10 Apply a small amount of Loctite® 242® onto the pinch bolt.

Use a T8 TORX® wrench to thread the SwingLink pinch bolt into the lever body.

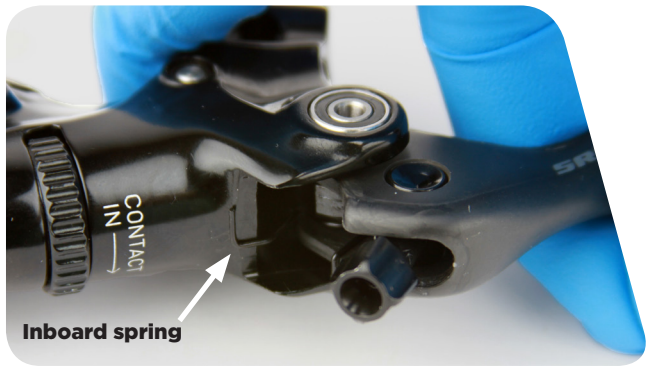
Use a torque wrench and a T8 TORX bit socket to tighten the bolt to 1-1.3 N·m (10-11 in-lb).

Lever Blade Installation

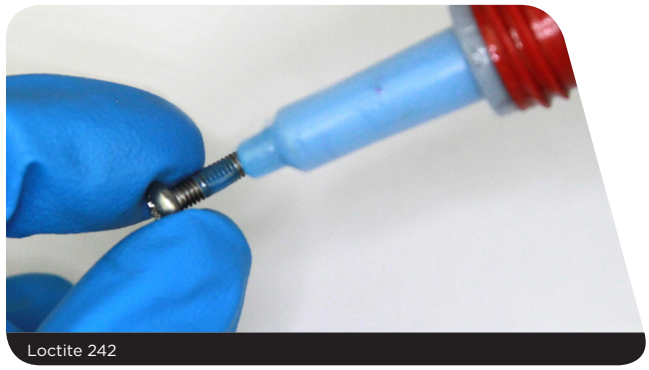
1 Insert the lever blade into the lever body with the inboard spring pressing against the lever body.

Align the pivot holes of the lever blade and the lever body.

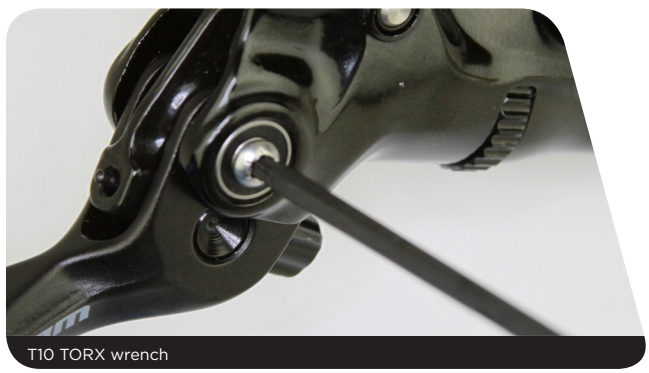
Make sure the lever return spring is seated properly in the lever. The outboard end of the spring must press against the lever blade, while the inboard end of the spring must press against the lever body. If the return spring is not seated properly the reach adjustment feature of the lever blade will be inoperable.



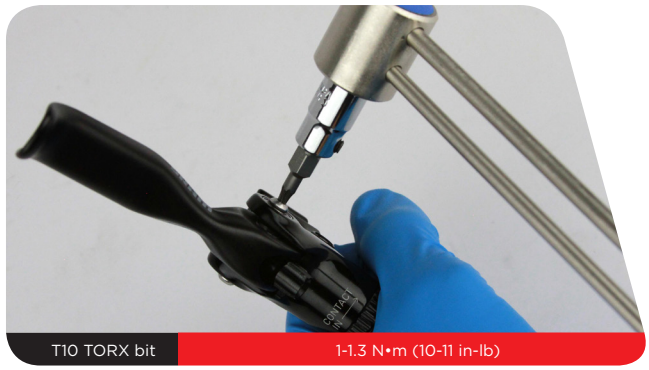
2 Apply a small amount of Loctite® 242® onto the threads of each pivot bolt.


Loctite 242

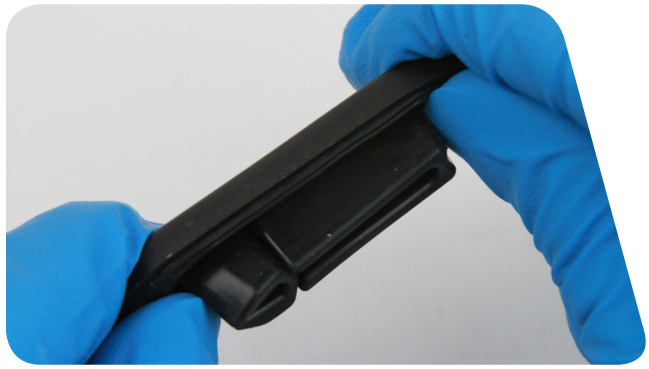
3 Use a T10 TORX® wrench to thread each pivot bolt into the bearings on each side of the lever body.


T10 TORX wrench

4 Use a torque wrench and a T10 TORX® bit socket to tighten each pivot bolt to 1-1.3 N·m (10-11 in-lb).



5 Press the bladder into the reservoir cap, the bladder must be flush with the cap to be properly installed.



6 Insert the reservoir cap/bladder assembly onto the lever body.

7 Use your fingers to insert the detent ball followed by the detent spring into the lever body reservoir hole closest to the lever blade.

8 Use a torque wrench and a T10 TORX® bit socket to tighten each reservoir cap bolt to 1-1.3 N·m (10-11 in-lb).

9 Spray isopropyl alcohol on the lever body and clean it with a rag.

This concludes the Guide Ultimate Brake Service.

NOTICE

You must bleed the brakes for optimal performance. For brake bleed, brake hose shortening, and brake pad replacement instructions, visit www.sram.com/service.

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